REMARKS

Claims 1-12 are pending in this application. Claims 11 and 12 have been withdrawn from consideration. Claims 4-8 have been allowed. Claims 1-3, 9 and 10 have been rejected. Claims 1 and 9 have been amended. Claims 10-12 have been canceled. No new matter has been added by this amendment. Reconsideration is respectfully requested in light of these amendments and the following remarks.

I. Election/Restriction Requirement Under 35 U.S.C. §121

The restriction requirement placing the instant claims into Groups I-II has been deemed proper and made final. Claims 11 and 12 have been withdrawn from further consideration. Accordingly, Applicants have canceled claims 11 and 12 without prejudice, reserving the right to file continuing applications for the canceled subject matter.

II. Objection to the Specification

The specification has been objected to because it is suggested that while page 9, last paragraph, states that "Figure 4 shows that ... CEL II migrates as two bands at 14 and 28 kDa in SDS-PAGE", Figure 4 shows a broad band at about 50 kDa and another band at about 57 kDa. The Examiner suggests appropriate correction.

As indicated in the paragraph bridging pages 8 and 9, the bands at ~45 and 57 kDa in Figure 4, are contaminant proteins. CEL II has an apparent molecular weight of 35 kDa (see page 7, line 7) and in Figure 4 is shown as two cleavage products at 14 and 28 kD. As it appears that these cleavage products of CEL II were not visible in the Examiner's version of the image presented

in Figure 4 as originally filed, Applicants submit herewith a replacement sheet containing an illustration of Figure 4 to replace Figure 4 as originally filed. In light of this clarification of what is presented in Figure 4, it is respectfully requested that this objection be reconsidered and withdrawn.

III. Rejection of Claims Under 35 U.S.C. §102

Claims 1-3 and 9-10 have been rejected under 35 U.S.C. 102(e) as being anticipated by Yeung (C). It is suggested that Yeung teach the purification of CEL I and CEL II and their separation from each other in Example 4. The Examiner suggests that the specific activity of CEL II, as in claim 10, is over 10,000,000 because the specific activity in Table 1 of the reference is 3.1×10^7 and CEL II was separated from this fraction by SDS-PAGE and had activity.

Claims 1 and 9 have been rejected under 35 U.S.C. 102(b) as being anticipated by either Oleykowski, et al. (BC) or Yang et al. (BE). The Examiner suggests that these references teach the purification of what is called CEL I. It is suggested that because "purified and isolated" does not require any level of purification or isolation, any degree will meet the claim requirements and therefore these references anticipate the present invention.

Applicants respectfully disagree with these rejections.

It is respectfully noted that the CEL I enzyme of Yeung was obtained via the steps disclosed in Table 1 and is, in fact, a mixture of CEL I and CEL II. Yeung states:

> "There are two nuclease bands that copurify during all the purification steps. We show below that the minor band is not derived from the major band. The major nuclease activity, designated CEL I, migrates at 43 KDa on SDS PAGE (FIG. 1A). The minor activity at 39 KDa is a putative isozyme we named CEL II FIG. 1C, lane 3".

While Table 1 of Yeung is a summary of the purification of CEL I and indicates a specific activity of 3.1 X 10^7 U/mg, there is no teaching or suggestion that this specific activity is inclusive of CEL II. Moreover, even if one were to assume that the fraction containing a specific activity of 3.1 X 10^7 U/mg was inclusive of both CEL I and CEL II as presented in FIG. 1C, lane 3, the legend for this figure indicates that lane 3 is "Purified CEL I with a small amount of CEL II." Therefore, it could not be reasonably assumed that the CEL II had a specific activity of greater than 10,000,000 U/mg protein as it was only a small amount of the fraction, arguably less than 30%.

In contrast, Applicants clearly teach a purified and isolated CEL II endonuclease protein having a specific activity of greater than 10,000,000 units per mg protein as determined by DNA solubilization at pH 8.5 and a purified and isolated CEL I endonuclease protein having a specific activity of greater than 96,000,000 units per mg protein as determined by DNA solubilization at pH 5.5. See Table 1 at page 6. Nowhere in the teachings of Yeung or any of the other cited references do Applicants find any teaching or suggestion of the highly purified and isolated CEL I and CEL II endonuclease proteins of the present invention.

Thus, in an earnest effort to clarify the nature of the endonuclease proteins of the present invention, Applicants have amended claim 1 and claim 9, by dependency upon claim 1, to

indicate that the purified and isolated CEL II endonuclease protein has a specific activity of greater than 10,000,000 units per mg protein as determined by DNA solubilization at pH 8.5 and the CEL I endonuclease protein has a specific activity of greater than 96,000,000 units per mg protein as determined by DNA solubilization at pH 5.5 as supported by the disclosure in Table 1 at page 6. As support for this amendment is also found in claim 10, this claim has been canceled. In so far as the cited references fail to teach each and every element of the claims, these reference cannot be held to anticipate the present invention under 35 U.S.C. 102(e) or 102(b). It is therefore respectfully requested that these rejections be reconsidered and withdrawn.

III. Allowable Subject Matter

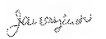
Applicants are pleased to acknowledge that claims 4-6 have been found allowable.

V. Conclusion

Applicant believes that the foregoing comprises a full and complete response to the Office Action of record. Accordingly,

favorable reconsideration and subsequent allowance of the pending claims is earnestly solicited.

Respectfully submitted,



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